

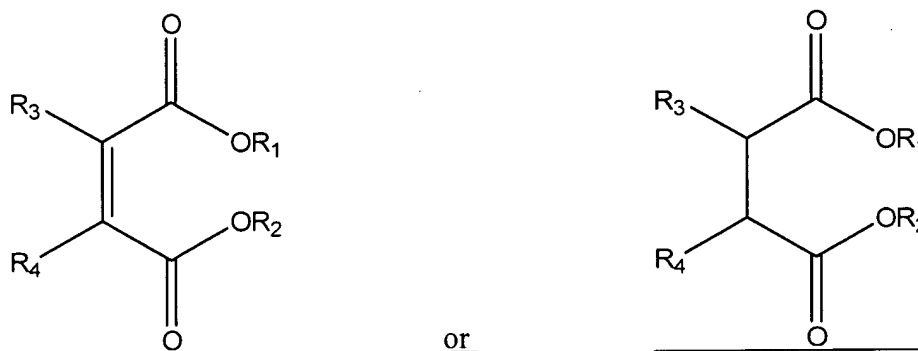
### AMENDMENTS TO THE CLAIMS

1-59. (Canceled)

60. (Currently amended) A method for vaccinating a mammal against a target antigen, comprising:

introducing into the mammal by disrupting the stratum corneum an effective dose of the target antigen or an epitope(s) thereof; and

administering to the mammal a topical treatment which in the absence of antigen is sufficient to increase the number of dendritic cells migrating to a lymphoid organ, wherein the topical treatment comprises a lipophilic molecule of < 500 daltons capable of traversing the stratum corneum and having the formula selected from the following formulas:



wherein R<sub>1</sub> and R<sub>2</sub> are selected independently from the group consisting of alkyl side chains containing 1 to 16 carbon atoms, C<sub>1</sub> to C<sub>16</sub> substituted alkyl, C<sub>3</sub> to C<sub>10</sub> cycloalkyl, C<sub>3</sub> to C<sub>10</sub> substituted cycloalkyl, C<sub>2</sub> to C<sub>10</sub> alkenyl, C<sub>2</sub> to C<sub>10</sub> substituted alkenyl, C<sub>2</sub> to C<sub>10</sub> alkynyl, and C<sub>2</sub> to C<sub>10</sub> substituted alkynyl;

wherein R<sub>3</sub> and R<sub>4</sub> are independently hydrogen atom, hydroxy group, or are linked to form a cyclic ring, which comprises unsaturated C<sub>6</sub> cycloalkyl.

61. (Cancelled)

62. (Cancelled)

63. (Currently amended) The A method of Claim 62 for vaccinating a mammal against a target antigen, comprising:

introducing into the mammal by disrupting the stratum corneum an effective dose of the target antigen or an epitope(s) thereof; and

Appl. No. : 09/809,158  
Filed : March 15, 2001

administering to the mammal a topical treatment which in the absence of antigen is sufficient to increase the number of dendritic cells migrating to a lymphoid organ, wherein the topical treatment comprises a lipophilic molecule capable of traversing the stratum corneum, and wherein the lipophilic molecule is dibutyl phthalate or camphor.

64. (Cancelled)

65. (Cancelled)

66. (Currently amended) The method of Claim 60 64, wherein the R<sub>1</sub> and R<sub>2</sub> groups are identical C<sub>1</sub> to C<sub>6</sub> alkyl moieties.

67. (Currently amended) The method of Claim 60 64, wherein R<sub>1</sub> and R<sub>2</sub> are (CH<sub>2</sub>)<sub>3</sub>-CH<sub>3</sub>.

68. (Cancelled)

69. (Cancelled)

70. (Cancelled)

71. (Currently amended) The A method of Claim 64, for vaccinating a mammal against a target antigen, comprising:

introducing into the mammal by disrupting the stratum corneum an effective dose of the target antigen or an epitope(s) thereof; and

administering to the mammal a topical treatment which in the absence of antigen is sufficient to increase the number of dendritic cells migrating to a lymphoid organ, wherein the topical treatment comprises a lipophilic molecule capable of traversing the stratum corneum, and wherein the lipophilic molecule is selected from the group consisting of dibutyl phthalate, dibutyl-D-tartrate, N,N-diethyl-toluamide, dibutylfumarate, di(2-ethylhexyl)fumarate, diisooctylmaleate, diethylhexylmaleate, diisooctylfumarate, benzoic acid, biphenylmaleate ~~biphenylmaleate~~, dioctylphthalate, dibutylmaleate, dioctylmaleate, dibutylsuccinate, dioctylsuccinate, dinonylphthalate, diisononylphthalate, dimethylphthalate, diethylphthalate, dipropylphthalate, diphenylphthalate, dibenzylbutylphthalate, and diethylmethylphthalate.

72. (Cancelled)

73. (Currently amended) The method of Claim 60, 63 or 71 64, wherein the lipophilic molecule has an oil/water partition coefficient >1.

Appl. No. : 09/809,158  
Filed : March 15, 2001

74. **(Currently amended)** The method of Claim 60, 63 or 71 ~~61~~, wherein the lipophilic molecule has an oil/water partition coefficient of between about 10 and about  $10^6$ .

75. **(Currently amended)** The method of Claim 60, 63 or 71, wherein the topical treatment further comprises an organic solvent.

76. **(Previously presented)** The method of Claim 75, wherein the organic solvent is acetone.

77. **(Cancelled)**

78. **(Currently amended)** The method of Claim 60, 63 or 71, wherein the introducing step further comprises transferring cells comprising the target antigen or epitope(s) thereof.

79. **(Previously presented)** The method of Claim 78, wherein the target antigen is selected from the group consisting of a virus, a bacterium, a fungus, and a parasite.

80. **(Currently amended)** The method of Claim 60, 63 or 71, wherein the introducing step further comprises injecting the target antigen or epitope(s) thereof.

81. **(Previously presented)** The method of Claim 80, wherein the injection is made via a route selected from the group consisting of intraepidermal, intradermal, subcutaneous, intramuscular, intravascular, or into a specific organ.

82. **(Currently amended)** The method of Claim 60, 63 or 71, wherein the topical treatment is sufficient to increase ~~further increases~~ the number of ~~target antigen-bearing~~ dendritic cells in the lymphoid organ by a factor of about 2 to about 1000 times the number of resident dendritic cells in an untreated mammal.

83. **(Currently amended)** The method of Claim 82, wherein the number of ~~target antigen-bearing~~ dendritic cells in the lymphoid organ is increased by a factor of about 5 to about 100 times the number of resident dendritic cells in an untreated animal.

84. **(Currently amended)** The method of Claim 60, 63 or 71, wherein the target antigen is a tumor antigen.

85. **(Cancelled)**

86. **(New)** A method for vaccinating a mammal against a target antigen, comprising:  
introducing into the mammal by injection an effective dose of the target antigen or an epitope(s) thereof; and

**Appl. No.** : **09/809,158**  
**Filed** : **March 15, 2001**

administering to the mammal a topical treatment which in the absence of antigen is sufficient to increase the number of dendritic cells migrating to a lymphoid organ, wherein the topical treatment comprises ultrasound.